CLAIMS

1. A sizing composition for the manufacture of a thermal and/or acoustic insulation product based on mineral fibers, especially glass fibers or rock fibers, characterized in that it comprises at least one polycarboxylic acid and at least one polyamine.

2. The composition as claimed in claim 1, characterized in that the polycarboxylic acid has a functionality, expressed by the number of carboxylic groups that can react with the polyamine, equal to or greater than 2, preferably less than 5000, advantageously less than 2000 or even less than 500.

3. The composition as claimed in claim 1 or 2, characterized in that the polycarboxylic acid has a molecular mass ranging from 50 to 10^5 g/mol, preferably less than 10^4 g/mol.

4. The composition as claimed in one of claims 1 to 3, characterized in that the polycarboxylic acid is chosen from carboxylic acids of functionality equal to 2, such as succinic acid, glutaric acid, adipic acid, azelaic acid, sebacic acid, tartaric acid, phthalic acid and tetrahydrophthalic acid, of functionality equal to 3, such as citric and trimellitic acid, and of functionality equal to 4, such as 1,2,3,4-butanetetracarboxylic acid (BTCA).

5. The composition as claimed in claim 4, characterized in that the carboxylic acid is citric acid, tartaric acid or 1,2,3,4-butanetetracarboxylic acid (BTCA).

6. The composition as claimed in claim 3, characterized in that the polycarboxylic acid is chosen from oligomers and polymers that are obtained by homopolymerization of unsaturated acids, such as

acrylic acid, methacrylic acid, crotonic acid, isocrotonic acid, maleic acid, cinnamic acid, 2-methylmaleic acid, itaconic acid, 2-methylitaconic acid and α,β-methyleneglutaric acid, and by copolymerization of one or more of these monomers with one or more other, hydrophilic and/or hydrophobic, unsaturated monomers selected from olefins, such as ethylene, propylene and isobutylene, styrene and its derivates, and macromonomers having terminal unsaturation.

7. The composition as claimed in claim 6, characterized in that the polycarboxylic acid is chosen from polyacrylics such as poly(acrylic acid), ethylene/acrylic acid copolymers and acrylic acid/maleic acid copolymers.

8. The composition as claimed in one of claims 1 to 7, characterized in that the polyamine has a functionality, expressed by the number of amine functional groups, equal to or greater than 2, preferably less than 200.

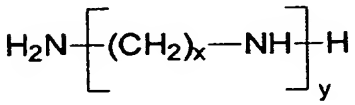
9. The composition as claimed in one of claims 1 to 8, characterized in that the amine functional groups are primary and/or secondary amine functional groups.

10. The composition as claimed in one of claims 1 to 9, characterized in that the polyamine is chosen from aliphatic polyamines having a saturated or unsaturated, linear or branched chain, possibly containing one or more heteroatoms, especially N and/or O, and aromatic polyamines.

11. The composition as claimed in one of claims 1 to 10, characterized in that the polyamine has a molecular mass of less than 1000 g/mol, preferably than 500 g/mol.

12. The composition as claimed in one of claims 1 to 11, characterized in that the polyamine is chosen from:

- compounds of formula:



in which:

x varies from 2 to 10, preferably 2 to 4 and
y varies from 1 to 10;

- polyethyleneimines, polyaminostyrenes, and products resulting from the degradation of chitin in basic medium (chitosans).

13. The composition as claimed in one of claims 1 to 12, characterized in that it comprises, expressed in parts of dry matter, from 20 to 80 parts by weight of polycarboxylic acid and from 80 to 20 parts by weight of polyamine.

14. The composition as claimed in one of claims 1 to 13, characterized in that it furthermore includes, per 100 parts by weight of dry matter of polycarboxylic acid and of polyamine:

- from 0 to 20 parts, preferably 6 to 15 parts, of an oil;
- 0 to 2 parts, preferably 0.4 parts, of a silane;
- 0 to 5 parts of a catalyst; and
- 0 to 20 parts of a plasticizer.

15. A method of preparing the sizing composition as claimed in one of claims 1 to 14, which consists in diluting or emulsifying, in water, the polycarboxylic acid and the polyamine, optionally with the additives.

16. The method as claimed in claim 15, which consists in mixing the polycarboxylic acid in solution or in

aqueous dispersion, preferably containing at most 10% by weight, with the polyamine in aqueous solution, preferably containing at most 10% by weight, optionally with the additives.

17. The method as claimed in claim 15, which consists in making a premix by introducing the polyamine directly into the aqueous solution or dispersion of polycarboxylic acid, preferably containing at most 10% by weight, and in subsequently adding the optional additives.

18. The method as claimed in claim 17, in which the premix is subjected to a heat treatment with the aim of carrying out a partial pre-reaction on the polycarboxylic acid and the polyamine, especially at a temperature of around 50 to 100°C.

19. The use of the composition as claimed in one of claims 1 to 14 or of the method as claimed in one of claims 15 to 18 for the sizing of mineral fibers, especially glass or rock fibers.

20. Mineral fibers bonded together owing to the sizing composition as claimed in one of claims 1 to 14.

21. The mineral fibers as claimed in claim 20, characterized in that they consist of glass or rock.

22. A thermal and/or acoustic insulation product essentially consisting of mineral fibers as claimed in either of claims 20 and 21.

23. A veil of mineral fibers, especially glass fibers, characterized in that it comprises fibers as claimed in claim 19 and in that it has a grammage of between 10 and 300 g/m^2.